



Call for Post-doc



JOB DESCRIPTION

Position: Postdoctoral position in Biological Sciences / Biochemistry – IBMC, Strasbourg, France

Job Title : Mode of action of antimalarial benzylmenadiones

Job Summary :

A renewable 1-year postdoctoral position is open at IBMC (Inserm/CNRS/University of Strasbourg) to investigate the mode of action of novel and promising antimalarial benzylmenadiones with potent curing and transmission blocking activities. This project is based on a combination of complementary strategies, notably genetics, activity-based protein profiling and proteomics in both yeast and *Plasmodium* parasites, to identify putative benzylmenadione targets. Candidate targets will be validated by genetic engineering in *Plasmodium*, and their role in parasite biology and in mediating benzylmenadione activity will be investigated.

Job Description

The researcher will join the research unit Insect Models of Innate Immunity (M3i), located at the Institute of Molecular and Cellular Biology (IBMC) in Strasbourg, and more particularly the Inserm team 'Immune responses in mosquito vectors'. This group, led by Dr. Stephanie Blandin, is dedicated to the study of the resistance/susceptibility of mosquitoes to pathogens transmitted to humans (parasites and viruses), and to the development of novel strategies to limit disease transmission, including (but not limited to) novel drugs.

The project will be supervised by Dr. Stephanie Blandin. It is part of a French/Swiss collaborative consortium working on novel antimalarial drugs and encompassing multiple disciplines: medicinal chemistry of redox-active antiparasitic compounds (Dr. Elisabeth Davioud-Charvet at ECPM, Strasbourg), mass spectrometry analysis & proteomics (Drs. Christine Schaeffer & Jean-Marc Strub at IPHC, Strasbourg), parasitology and drug screening (Profs. Pascal Maeser & Jennifer Keiser at Swiss TPH in Basel, Switzerland), yeast genetics (Dr. Brigitte Meunier at I2BC, Gif-sur-Yvette, France) and biology of mosquitoes and malarial parasites (Dr Stephanie Blandin at IBMC, Strasbourg).

The postdoctoral researcher will start by evaluating a series of candidate target genes to decipher the mode of action of antimalarial benzylmenadiones in *Plasmodium* parasites. In parallel, he/she will look for additional candidates using an affinity-based protein profiling approach coupled with proteomics for which we have already reported a first proof-of-concept (Cichocki B. et al., *JACS*^{Au} 2021, 1(5):669-689. doi: 10.1021/jacsau.1c00025). The candidate should be ready to come up with new models, and to develop relevant assays to test them.

Main activities:

- **Parasitology:** *Plasmodium falciparum* culture (both asexual and gametocytes), parasite enrichment, transfection, assays to measure parasite sensitivity and resistance to drugs, establishment of new assays.
- **Molecular Biology:** construction of plasmids for CRISPR/Cas9 and Selection-Linked Integration (SLI) to generate knockout, overexpression and allele replacement of putative target genes, validation of cassette insertion...
- **Affinity-Based Protein Profiling** to identify new benzylmenadione targets in parasites
- **Reporting** of results in electronic lab-book & lab meetings, attendance to conferences, writing manuscripts.
- **Supervision** of students (recommended)

Offer Requirements:

- a letter of motivation
- a CV with a list of publications, talks, posters, and the name of two references

Eligibility criteria : PhD degree

We are looking for a highly motivated, and creative candidate with a strong background in parasitology (fundamental criteria). Additional expertise in drug discovery, molecular biology and/or proteomics would be appreciated. The ideal candidate will have a proven track record of scientific excellence, very good communication and writing skills as well as a strong commitment to experimental work. The candidate should be also able to perform independent research and will be encouraged to make use of the expertise and facilities of partners whenever necessary. Knowledge of the French language is not required. Thorough knowledge of English, both oral and written, is mandatory.

JOB DETAIL

Type of contract : temporary (1 to 3 years)

Status : full time

Company / Institute : Inserm

Country : France

City : Strasbourg

Postal Code : 67084

Street : IBMC, 2 allée K. Roentgen

APPLICATION DETAILS (mandatory)

Provisional start date : 01/03/2023

Application deadline : 27/01/2023

Application e-mail : bstevenin@unistra.fr
